

Observations on Some Jewel Beetles (Buprestidae: Coleoptera) in Western Australia

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Abstract

Field observations are provided on bird predation on *Stigmodera (Themognatha) heros* Gehin and *S. (T.) tibialis* Waterhouse and possible bird predation on *Julodimorpha bakewelli* (White). These observations were made during 1977 and 1978 in areas of Western Australia.

Introduction

Over the past several years a number of interesting observations have shed some light on the general biology and ecology of Australian jewel beetles (Buprestidae) (e.g. Hawkeswood, 1978, 1981a, 1981b, 1982, 1983; Hawkeswood and Peterson, 1982; Peterson and Hawkeswood, 1980; Williams, 1977, 1983; Williams and Williams, 1983). Further observations on Buprestidae from Western Australia (where a large number of species occur) are presented and discussed below.

Magpie predation on *Stigmodera (Themognatha) heros* Gehin and *S. (T.) tibialis* Waterhouse.

Stigmodera heros is one of the largest mallee-feeding species of jewel beetle. It has a wide distribution across the mallee sandplain habitats of southern Western Australia to north-west Victoria. The species has been recorded as a pollinator of *Melaleuca pauperiflora* F. Muell. (Hawkeswood, 1980). *Stigmodera tibialis* is one of the most common species of mallee-feeding buprestid in southern Western Australia and South Australia. Adults feed on nectar from *Eucalyptus cylindriflora* Maiden et Blakely (Hawkeswood, 1982).

The following observations were made on 19 February, 1978 (by D.G.K.) while travelling through mallee sandplain vegetation dominated by *Eucalyptus foecunda* Schau., south-east of Hyden (32° 27' S, 118° 52' E). Two adult Western Magpies (*Gymnorhina dorsalis*) were observed tossing a large brown object between themselves on the side of the road. Closer examination revealed the object to be a large female *Stigmodera heros*. After the magpies had taken flight as a result of disturbance, the beetle was captured and closely examined. It was found to be alive and had suffered little body damage. During a quick perusal of the road verge, a loud buzzing sound was heard from a nearby thicket of *E. foecunda*. Further investigation revealed a specimen of *Stigmodera tibialis* which had lost five legs and was struggling on its back. It is possible that the beetle had also been attacked by magpies.

These brief observations suggest that during summer, when the larger buprestid species are on the wing, some may be subject to predation by magpies (and probably crows). However, the magpies may have difficulty in cracking the hard body coverings of the beetles and in keeping the large, rotund bodies between the smooth edges of the beak. The latter is analogous with attempting to cut a marble with a pair of scissors.

Observations on the remains of *Julodimorpha bakewelli* (White) scattered around dead *Xanthorrhoea* stumps.

On 1 October, 1977, at Mt. Peron (near Greenhead, 30° 07' S, 09' E) the whole or partly dismantled bodies of *Julodimorpha bakewelli* were observed (by D.G.K.) littered inside and around the remains of old stumps of *Xanthorrhoea*

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preissii Endl. (Xanthorrhoeaceae). The grass-trees were growing abundantly in typical coastal *Banksia* heath vegetation on the upper slopes of Mt. Peron overlooking the adjacent coastline.

It is probable that the beetles were deposited at the base of the blackboy (grass-tree) stumps by small birds of prey which use the stumps as solid perches to facilitate easy capture of beetles flying (or crawling) over the surrounding heath. Many of the beetles had their abdomens removed and others had crushed bodies so that it appears that the birds fed on the buprestids when they returned to their resting posts on the blackboy stumps.

From the bird list given by Dell and Johnstone (1977) for the Cockleshell Gully area it appears that the most likely avian predator in the area is the Australian Kestrel (*Falco cenchroides*). This is a moderately common bird of heath and farmlands especially during October and February (Dell and Johnstone, 1977).

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REFERENCES

- Dell, J. and Johnstone, R.E. (1977). The birds of Cockleshell Gully Reserve and adjacent areas. In: A vertebrate survey of the Cockle-shell Gully Reserve, Western Australia. *Rec. West. Aust. Mus. Suppl.* No. 4.
- Hawkeswood, T. J. (1978). Observations on some Buprestidae (Coleoptera) from the Blue Mountains, N.S.W. *Aust. Zool.* 19: 257-275.
- Hawkeswood, T. J. (1980). Jewel beetles as pollinators of *Melaleuca pauperiflora* E. Muell. between Eucla (W.A.) and Koonalda (S.A.) *West. Aust. Nat.* 14: 238-239.
- Hawkeswood, T. J. (1981 a). Observations on two sympatric species of Buprestidae (Coleoptera) from sand dunes on the north coast of New South Wales. *Victorian Nat.* 98: 146-151.
- Hawkeswood, T. J. (1981 b). Observations on some jewel beetles (Coleoptera: Buprestidae) from the Armidale district, north-eastern New South Wales. *Victorian Nat.* 98: 152-155.
- Hawkeswood, T. J. (1982). Notes on insect pollination to two species of *Eucalyptus* (Myrtaceae) from south-west Western Australia. *Victorian Nat.* 99: 28-37.
- Hawkeswood, T. J. (1983). Notes on the biology and distribution of a rare jewel beetle *Pseudotaenia waterhousei* (Van de Poll) (Coleoptera: Buprestidae). *Victorian Nat.* 100: 238-241.
- Hawkeswood, T. J. and Peterson, M. (1982). A review of larval host records for Australian jewel beetles (Coleoptera: Buprestidae). *Victorian Nat.* 99: 240-251.
- Peterson, M. and Hawkeswood, T. J. (1980). Notes on the biology and distribution of two species of *Diadoxus* (Coleoptera: Buprestidae) in Western Australia. *West. Aust. Nat.* 14: 228-233.
- Williams, G. A. (1977). A list of the Buprestidae (Coleoptera) collected from *Leptospermum flavescens* Sm. at East Minto, New South Wales. *Aust. Ent. Mag.* 3: 81-82.
- Williams, G. A. (1983). Observations on the genus *Alcinous* Deyrolle (Coleoptera: Buprestidae). *Victorian Nat.* 100: 37-39.
- Williams, G. A. and Williams, T. (1983). A list of the Buprestidae (Coleoptera) of the Sydney basin, New South Wales, with adult food plant records and biological notes on food plant associations. *Aust. Ent. Mag.* 9: 81-93.

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